

Patent Appin. No. 09/847,127  
Amendmt. Dated January 9, 2004

PATENT

### REMARKS/ARGUMENTS

This Amendment is in the newly approved Revised Format such that each section of this Amendment begins on a separate sheet.

Initially, it is noted that Claims 1-14 and 19 were previously cancelled. By the foregoing amendments, Claims 15-18 and 20-23 have been cancelled. New Claims 24-33 have been drafted and added to the present application by the foregoing amendments. It is believed that new Claims 24-33 more clearly and particularly point out the novel features of the present invention. It is believed that the subject matter of new Claims 24-33 is supported by the disclosure of the present specification and, therefore, no new matter is introduced into the present application by new Claims 24-33.

#### Claim Rejections Under 35 U.S.C. § 103(a)

On pages 5-8 of the Office Action, the Examiner rejected Claims 15-18 and 20-23 under 35 U.S.C. § 103(a) as being unpatentable over "Hydrogen-Fueled Flares", alone, or in view of Vickery (US Patent No. 5,061,463 ) or Milfeld et al. (US Patent No. 5,366,699). Applicants and their attorney wish to thank the Examiner for providing detailed comments and rationale for these rejections in the most recent Office Action. In view of the cancellation of rejected Claims 15-18 and 20-23, it is believed that the foregoing rejections are now moot.

With regard to the new Claims 24-33, Applicants believe that the present invention as recited in new independent Claim 24 is novel and unobvious and, therefore, patentable over the references cited to date by the Examiner.

As recited in new independent Claim 24, the present invention relates generally to a method for improving the efficiency of a process where the process comprises a process stream, at least a portion of which is capable of forming a gaseous hydrogen-containing enrichment stream, and a dilute gaseous waste material stream not capable of self-sustaining combustion and at least a portion of which is converted to carbon dioxide and water vapor by burning using a flare apparatus. More particularly, as recited in new independent Claim 24, the method of the present invention comprises the steps of forming a gaseous hydrogen-containing enrichment stream derived from at

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least a portion of the process stream and blending the gaseous hydrogen-containing enrichment stream with the dilute gaseous waste material stream to produce a blended flare feed stream. Additional steps of the method of the present invention, as recited in new independent Claim 24 are feeding the blended flare feed stream to the flare apparatus and burning it using the flare apparatus to convert at least 80% of the dilute gaseous waste material stream to carbon dioxide and water.

None of the references cited previously against the now-cancelled claims teaches a method for increasing the efficiency of a process wherein there is an existing process stream, at least a portion of which can be used to form a gaseous hydrogen-containing enrichment stream, and a dilute gaseous waste material stream that is not itself capable of self-sustaining combustion and which involves the steps of forming a gaseous hydrogen-containing enrichment stream derived from at least a portion of the process stream and blending that gaseous hydrogen-containing enrichment stream with the dilute gaseous waste material stream to produce a blended flare feed stream which is then feed to, and burned in, the flare apparatus thereby achieving at least an 80% conversion of the dilute gaseous waste material stream to carbon dioxide and water. In contrast, the method of the present invention requires that the gaseous hydrogen-containing enrichment stream be derived from an existing process stream and then used to increase the hydrogen content of an existing dilute gaseous waste material stream that is not otherwise itself capable of self-sustaining combustion in a flare.

None of the previously cited references, i.e., "Hydrogen-Fueled Flares", Vickery, or Milfeld et al., concern or teach the arrangement, modification or blending of existing process streams to form a hydrogen-enriched dilute waste gas materials stream which is then burned in a flare apparatus. "Hydrogen-Fueled Flares" teaches only the possibility of blending, on a bench scale, a pure hydrogen gas stream with another gaseous stream. Vickery and Milfeld et al. are both limited to teaching the addition of a gaseous fuel to a waste stream which is to be incinerated at high temperatures in closed vessels, which is quite different from conversion and destruction by open-atmosphere flaring. Applicants respectfully maintain that there is no reason why a person of ordinary skill working in the field of destruction of dilute gaseous waste materials using a flare would look to documents such as Vickery and Milfeld et al.,

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which discuss incinerators, for guidance as to how to modify and blend process streams for feeding to a flare.

In the foregoing circumstances, it is respectfully submitted that the present invention as recited in new independent Claim 24 is novel and unobvious over "Hydrogen-Fueled Flares", Vickery, and Milfeld et al. Thus, it is believed that new independent Claim 24, as well as new Claims 25-33 which depend from Claim 24, are patentable over "Hydrogen-Fueled Flares", Vickery and Milfeld et al.

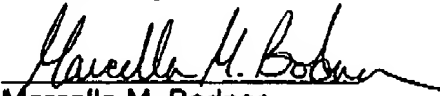
#### Conclusion

Applicants and their attorney hereby respectfully request entry and examination of new Claims 24-33. If, however, there remain any open issues which the Examiner believes can be resolved by a telephone call, the Examiner is cordially invited to contact the undersigned attorney.

An extension fee of \$110 is believed to be due in connection with the submission of this Amendment within one month after the original due date. This extension fee is covered by the accompanying Petition for Extension and Fee Transmittal Form. No additional fees are believed to be due in connection with the submission of this Amendment. However, if any fees, including petition and extension fees, are due in connection with the submission of this Amendment, the Commissioner is hereby authorized to charge them, as well to credit any overpayments, to **Deposit Account No. 18-1850**.

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